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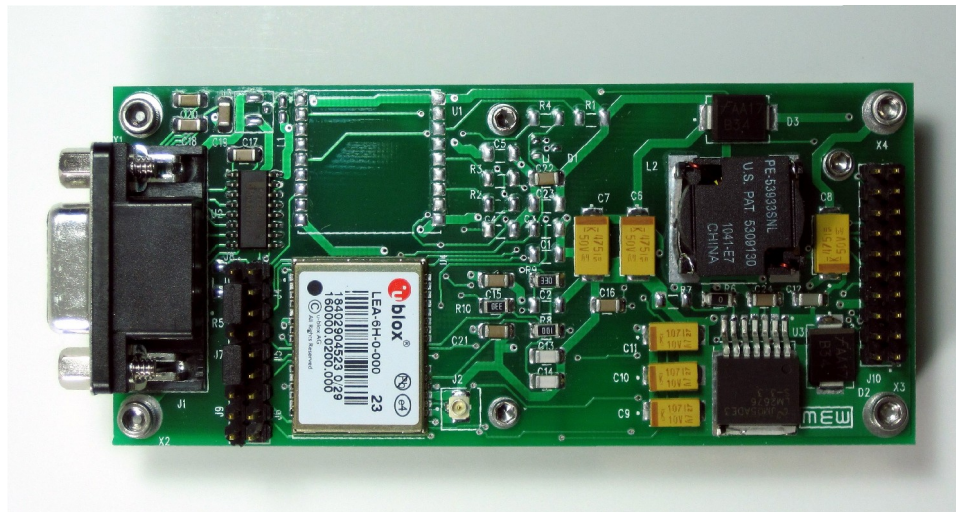
Balloon Boy Quick Start Guide, Airborne Package with U-Blox GPS

DOC NUM:
QSG-000117-03

Revision Date: 4DEC2010
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1.0 Introduction

The Balloon Boy (BB) Airborne Package (AP) detailed in this Quick Start Guide consists of a Printed Wiring Assembly (PWA) that is populated with the U-Blox® GPS module and Laird Technologies® 900 MHz 1 watt RF modem. The MEW part number is PWA-000117-03.

2.0 Purpose

This Quick Start Guide is intended to be a brief introduction that will help the end user to rapidly “bring up” the system to quickly verify functionality.

3.0 Scope

This Quick Start Guide is applicable to the Balloon Boy Airborne Package PWA bearing the part number PWA-000117-03. This part is one of three configurations that utilize the MEW Printed Wiring Board (PWB) PWB-000117-01. The other two starting configurations (PWA-000117-01 and PWA-000117-02) are detailed in their separate respective Quick Start Guides. All common characteristics and associated data can be referenced in the Balloon Boy User Manual, MEW document number MAN-000117.

Instructions in the Quick Start Guide assume that the Airborne Package is configured with the “as shipped” default configuration.

4.0 Norms

For definitions, abbreviations, acronyms, safety, quality statement, and agency approvals please reference the Balloon Boy User Manual (MAN-000117)

Please note the following specific safety requirement:

WARNING: This equipment has been approved for mobile applications where the equipment should be used at distances greater than 20 cm from the human body (with the exception of hands, feet, wrists, and ankles). Operation at distances of less than 20 cm is strictly prohibited and requires additional SAR testing.

5.0 Getting Started

5.1 GPS Antenna

Verify that power to the PWA is disconnected.

Connect the GPS antenna coaxial cable to the U.FI connector J2.

This connector is a “snap-on, snap-off” type connector and is quite fragile. Due care is to be exercised when making or breaking this connector. It is recommended to observe standard ESD precautions when

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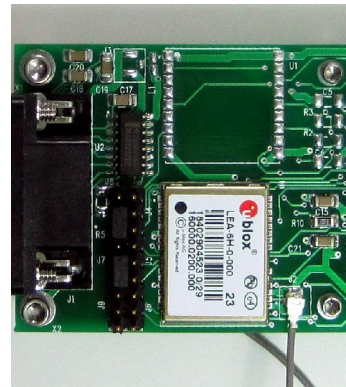
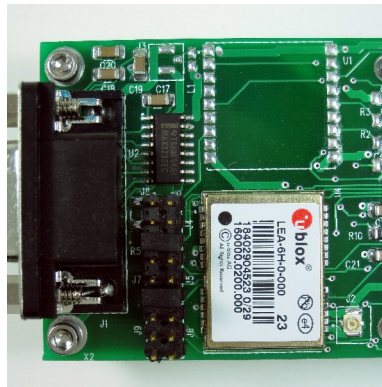
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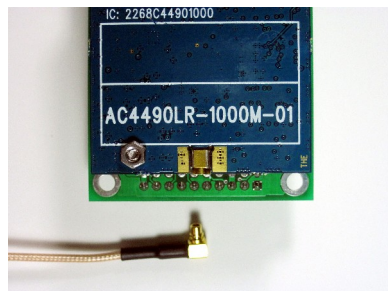
touching this input. This connector is not designed for cyclic make and break and will eventually wear out. Make and break connections to J2 sparingly to maximise service life. J2 can be replaced if it becomes too loose for proper functionality.



5.2 RF Modem Antenna

Verify that power to the PWA is disconnected.

Connect the RF modem antenna coaxial cable to the MMCX connector on the end of the RF modem. Common practice is to not power up the system unless a proper antenna or 50Ω dummy load is attached to the RF modem prior to power up.



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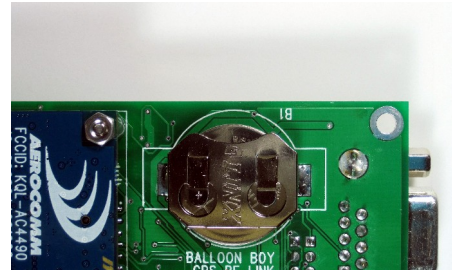
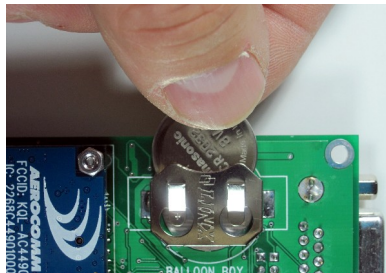
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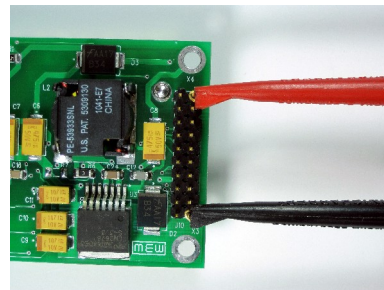
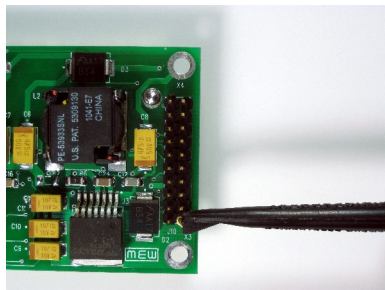
5.3 Battery Connections

If not previously installed, slide the CR2032 lithium backup battery into the B1 battery holder on the bottom (modem) side of the PWA. Insure that the “+” terminal of the backup battery is oriented “up” and in contact with the two battery holder fingers, one of which has a “+” sign stamped in it.



Connect the negative terminal of the battery to J10 pins 1 and/or 2. These two pins are internally connected to each other on the PWB.

Connect the positive terminal of the main battery to J10 pins 19 and/or 20. These two pins are internally connected to each other on the PWB.



The main battery voltage should be in the range of 8 to 28 Vdc. The power consumed is essentially constant so that higher battery voltage results in lower current draw and vice versa. Rev B and later PWAs are reverse power polarity protected.

A power switch in series with the main battery wire is very convenient.

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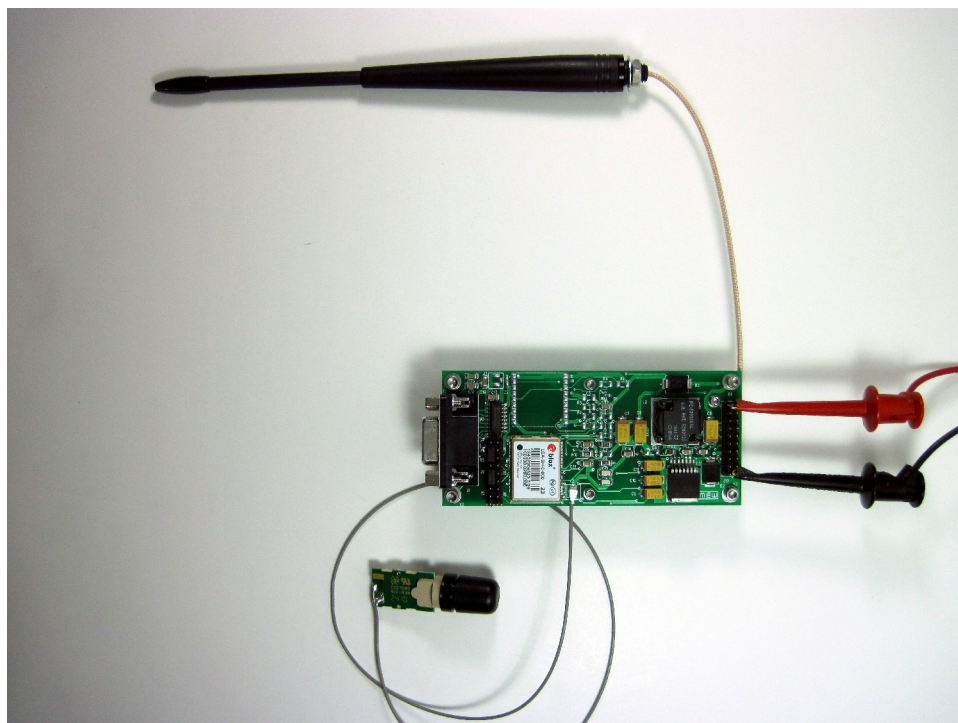
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For Rocket flights, two 9 volt alkaline transistor batteries In series will provide about 2.5 hours of continuous data transmission.

For Balloon flights, 8 AA lithium batteries (similar to Energizer® ultimate lithium) will typically provide about 22.5 hours of continuous data transmission.



This completes the bring up of the Balloon Boy Airborne Package with U-Blox GPS module. GPS data sentences should now be observed streaming to the Balloon Boy Ground Station that has been paired with the Unit Under Test.

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6.0 Disclaimers

MEW® is a registered service mark of MEW, LLC. All other referenced trade and service marks are the sole property of their respective owners.

MEW LLC assumes no liability from use, misuse, or misapplication of the equipment referenced in this document. The equipment referenced in this guide is specifically prohibited from use in human life support, medical, and/or health and safety critical systems or paths.

Design change, product enhancement and specifications are subject to change without prior notice at any time at the sole discretion of MEW, LLC.

7.0 “No Double Speak” Warranty

Mew LLC will repair or replace end user hardware that has been shown to be defective from the factory for a period of one year from delivery of product. End user must request a Return Goods Authorization (RGA) from MEW LLC prior to shipment or delivery of defective material. Warranty does not cover material that has been damaged from shipping, dropping, ballistic earth impact, EOS, ESD, physical damage due to negligence, fire, water, moisture, exceeding the environmental, or electrical specifications.

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8.0 Document Revision History

Revision	Date	Changes	Authorization	CC&BW
NC	4DEC10	Initial draft for review	D.M.B.	J.E.B.